DOCUMENT RESUME

ED 252 577 TM 850 054

AUTHOR O'Neal, Marcia R.; And Others
TITLE Validation of a Writing Attitude Scale.
PUB DATE Nov 84
NOTE 14p.; Paper presented at the Annual Meeting of the Mid-South Educational Research Association (13th, New Orleans, LA, November 14-16, 1984).
PUB TYPE Reports - Research/Technical (143) -- Speeches/Conference Papers (150)

EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS *Attitude Measures; Middle Schools; *Program Evaluation; Secondary Education; Secondary School Students; *Student Attitudes; *Test Construction; Test Reliability; *Writing (Composition); Writing Skills
IDENTIFIERS *Florida Writing Project Student Survey

ABSTRACT

Several analyses were performed as part of the process of validating a recently developed scale to measure the attitudes of students toward writing. The Florida Writing Project Student Survey is a 25-item measure of writing attitudes designed for use with students in grades six through twelve. It was developed to assess the attitudes of students who had participated in the Florida Writing Project. The evaluation consisted of six analyses for reliability, item analysis, correlation between the attitude scale and holistic writing scores, and the survey's sensitivity to change. Further analyses are recommended as a means of refining the survey and providing additional validation information. (DWH)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

ED252577

SCOPE OF INTEREST NOTICE
The Eric Facility has assigned this document for proccesing to: TM
In our judgment, this document is also of interest to the Clearinghouses noted to the right. Indexing should refect their special points of view CS

VALIDATION OF A WRITING ATTITUDE SCALE

U.S. DEPARTMENT OF EDUCATION
NATIONAL INSTITUTE OF EDUCATION
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)
X This document has been reproduced as received from the person or organization originating it.
☐ Minor changes have been made to improve reproduction quality.
• Points of view or opinions stated in this document do not necessarily represent official NIE position or policy.

Marcia R. O'Neal
The University of Alabama

Helen I. Guttinger and Chris M. Morris
The University of Florida

"PERMISSION TO REPRODUCE THIS MATERIAL HAS BEEN GRANTED BY
M. R. O'Neal
TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)."

TM 850 057

Paper Presented at the Thirteenth Annual Meeting
of the
Mid-South Educational Research Association
New Orleans, Louisiana
November 14-16, 1984

VALIDATION OF A WRITING ATTITUDE SCALe

Introduction

A critical component of any research and evaluation effort often involves decisions concerning the selection or development of appropriate instruments for measuring variables of interest to the researcher. In deciding whether a measure is appropriate for a particular purpose, the researcher must examine evidence of the instrument's reliability and validity. That is, the researcher should want to know if the instrument is measuring what it is intended to measure and if it is doing so in a consistent fashion.

Particularly in the case of newly developed instruments, part of the research process should include gathering and providing reliability and validity evidence. Many techniques may be used including both objective empirical measures and more subjective means. The purpose of the present paper is to report the results of several analyses performed as part of the process of validating a recently developed scale to measure the attitudes of students toward writing.

Background

The Florida Writing Project, a research endeavor conducted at the University of Florida, was a program designed to improve the writing skills of students at the middle and secondary levels. It was implemented in January of 1981 at the middle school level and received funding the following year for implementation at the secondary level (McLean, O'Neal, McCurley, Fritchi, Giles, & Steele, undated).

During the first year of implementation, the writing attitudes of students were measured using the Emig-King Writing Attitude Scale. This instrument has been described briefly by McLean et al. (undated) in their evalaution report.

To meet their need for a briefer scale which focused on areas more specific to the Writing Project (McLean, 1984), directors Helen Guttinger and Chris Morris modified significantly an instrument used by the Bay Area Writing Project, titled the Florida Writing Project Student Survey. The survey was designed to be used as a measure of writing attitudes. Florida students in grades 6 through 12 who participated in the Florida Writing Project made up the three groups in the study. The three groups were based on the training of the teachers. They included experimental, inservice, and control groups. In addition to a pretest/posttest measure of writing skills using holistic scoring, the students were pretested and posttested using the survey.

Description of the Instrument

The Florida Writing Project Student Survey contains 25 Likert-type items calling for students to respond on a scale from 1 (strongly agree) to 5 (strongly disagree) to various statements about writing and their own writing skills. Among the 25 items, 7 negative statements are located throughout the scale. Scoring of the survey consists of reversing positive statements so that "strongly agree" equals a response of 5 and then summing item responses to obtain a total score. Thus a high score would indicate a positive attitude toward writing and a low score would reflect a negative attitude. A copy of the survey is provided as Appendix A.

Methods

Evaluation of the scale consisted of six analyses. Two types of reliability estimates were obtained. Evidence of internal consistency was provided by computing Cronbach's alpha for the pretest and posttest scores separately as well as for all scores combined (since research results suggested little or no treatment effect on writing skills). Test-retest reliability was assessed by obtaining Pearson Product-Moment Correlations

between pretest and posttest results for control group students. The correlations were obtained for all control group students combined as well as for each grade separately.

Principal components factor analysis was conducted to investigate the possibility of underlying subscales. The scree test and the Kaiser criterion of eigenvalues greater than 1.0 were used in combination in determining the number of factors to extract and rotate. Item analysis was also performed which examined the strength of the correlation between each item and the total score.

A two-way analysis of variance repeated measures design was used in part to assess the survey's sensitivity to change. Finally, Pearson Product-Moment Correlations were computed at each grade between the attitude scale and the holistic writing score for pretest, posttest, and gain.

Results and Discussion

The internal consistency reliability estimate for the scale based on pretest scores was a coefficient alpha of .83 (N = 2154). For posttest scores, the coefficient alpha was .84 (N = 1896), and for all scores combined it was .83 (N = 4057). Alpha coefficients of this magnitude are indicative of a fairly high degree of internal consistency among items of the scale. Nunnally (1978) has suggested estimates of .80 or above are sufficient for basic research purposes.

Test-retest reliability estimates obtained for the control group at each grade separately ranged from .61 at grade 8 to .80 at grade 10. They are reported along with the N for each group in Table 1. Correlations were not computed for two of the grades because in one case there were no students in the control group (grade 6) and in another instance there were too few students in the control group (grade 11). While the test-retest reliability

for the control group students in all grades combined (N = 371) was .72, the time between testings (almost 9 months) may have been a contributing factor. Also, an examination of reliabilities by grades shows somewhat lower correlations for the lower grades with correlations reaching .80 for grades 10 and 12.

Table 1

Test-Retest Reliability Coefficients for the Control Group by Grade

Grade	N	r
7	77	.69
8	78	.61
9	45	.65
10	59	.80
11	—	—
12	106	.79

Principal components factor analysis using a combination of the scree test and Kaiser criterion suggested the possible existence of 4 to 6 factors. Varimax rotation was performed using 4, 5, and 6 factors as input. Simple structure was best approximated using 4 factors and a criterion of .4 correlation. In this instance, 20 items loaded on a single factor, 2 items loaded on two factors, and 3 items did not load on any factor.

Subjective evaluation of item content within each factor led to tentative labels. Items loading on Factor 1 alone all related to various positive extracurricular writing activities, suggesting the factor may give some indication of the extent and variety of writing the student does outside of school. One negative item which loaded negatively on this factor also loaded

negatively on Factor 3 which was in contrast to all the negative loadings of positive items on that factor. Factor 2 single loadings all suggested pride in writing, as did an item which loaded on both Factor 2 and Factor 3. The stronger loading of this item on Factor 3 suggested its inclusion there. The third factor item loadings were all items which indicate displeasure with writing, insecurity about writing, and generally an indication of writing self-concept. The double loading item which loaded more strongly here than on Factor 2 was a positive item which loaded negatively as would be expected. The content of items loading on Factor 4 did not suggest a tentative label. Furthermore, among the four items loading on this factor, all of which loaded positively, one item had previously been judged to be a negative item. Suggested factors and items as well as their loadings are shown in Table 2.

Table 2

Factor Analysis of Florida Writing Project
Student Survey Items

Variable	Loadings			
	I	II	III	IV
Factor I Extent & Variety of Writing				
Item 1 (+)	.56	.18	-.31	.10
Item 2 (-)	-.41	.03	.60	-.11
Item 12 (+)	.73	.07	.05	-.05
Item 13 (+)	.74	.05	.04	.04
Item 15 (+)	.54	.19	-.02	.11
Item 16 (+)	.59	.10	-.02	-.05
Item 25 (+)	.62	.25	-.15	.17
Factor 2 Pride in Writing				
Item 7 (+)	.19	.73	-.08	-.09
Item 11 (+)	.37	.46	-.13	.13
Item 14 (+)	.19	.51	-.17	.23
Item 20 (+)	.08	.45	-.37	.13
Item 21 (+)	.11	.77	.01	-.03

Table 2 Continued

Variable	Loadings			
	I	II	III	IV
Factor 3 Writing Self-Concept				
Item 3 (-)	.36	-.09	.53	-.18
Item 4 (-)	-.13	.02	.64	.00
Item 5 (+)	.07	.46	-.54	.12
Item 18 (-)	-.01	-.11	.53	.18
Item 19 (-)	.06	-.07	.62	.04
Item 22 (-)	.10	-.29	.45	.06
Factor 4				
Item 6 (+)	-.06	.00	.11	.44
Item 10 (+)	.19	.18	-.06	.54
Item 17 (+)	.26	.20	-.13	.41
Items not loading				
Item 8 (+)	.23	.33	-.10	.38
Item 9 (-)*	-.08	-.13	.09	.66
Item 23 (+)	.33	.38	-.10	.22
Item 24 (+)	.28	.21	-.20	.25

*Sign of loading was not consistent with others on factor.

Item analysis results showing corrected item-total correlations are provided in Table 3 for pretest (N = 2154), posttest (N = 1896), and combined (N = 4057) analyses. Results revealed that in the case of two items (6 and 9), item-total correlations were below .10 in all three analyses. For another three items (18, 19, and 22), correlations fell between .10 and .29 consistently. The remaining 20 items had corrected item-total correlations ranging from .31 to .59. While several items have low item-total correlations, the deletion of any one item would not increase coefficient alpha appreciably, presumably due to the low number of items included on the scale to begin with.

Table 3

Corrected Item-Total Correlations of FWP Student Survey Items for Pretest, Posttest, and Both Tests Combined

Item number	Corrected Item-Total Correlations		
	Pretest (N = 2154)	Posttest (N = 1896)	Total (N = 4057)
1	.55	.55	.55
2	.49	.49	.49
3	.48	.52	.50
4	.31	.33	.32
5	.49	.53	.51
6	.01	-.00	.03
7	.43	.49	.46
8	.38	.41	.39
9	-.02	.00	-.00
10	.32	.29	.31
11	.48	.52	.50
12	.40	.40	.40
13	.46	.46	.46
14	.44	.47	.46
15	.41	.42	.41
16	.36	.35	.35
17	.37	.36	.36
18	.24	.23	.24
19	.23	.27	.25
20	.42	.44	.43
21	.39	.40	.40
22	.24	.26	.25
23	.40	.46	.43
24	.37	.37	.37
25	.54	.59	.56

An abbreviated summary of analysis of variance results across all grades is provided in Table 4. In only one instance (at grade 8) was there a significant two-way interaction between measure (pre/post) and group (experimental/inservice/control). This result is not surprising since it is generally consistent with the absence of positive treatment effect indicated

in the analysis of holistic writing scores. The primary result of interest was the main effect for measure (pretest/posttest). Here there was a significant main effect in six of seven grades. The one instance in which a significant main effect for measure was not found was at grade 6. In all cases the change was in a positive direction from pretest to posttest. This included the result at grade 8 in which there was an interaction effect, and the simple effects revealed the posttest result for inservice students was greater than the pretest result. The change from pretest to posttest in the absence of a positive effect of treatment leads to the speculation that changes may have been due to maturity. Nonetheless, the evidence supports the notion that the instrument is sensitive to change.

Table 4

Summary by Grade of Analysis of Variance Results for Florida Writing Project Student Survey

Grade	F Two-Way Interaction	F Main Effects -Measure	Simple Effects/ Follow-ups
6	.15	.23	
7	1.23	6.92**	post > pre
8	4.89*	5.89**	test @ inservice post > pre
9	.37	7.02**	post > pre
10	2.31	7.23**	post > pre
11	.39	20.59**	post > pre
12	.74	8.00**	post > pre

* $p < .05$
** $p < .01$.

Results of pretest, posttest, and gain score correlations of the attitude scores with holistic scores are shown in Table 5. Significant correlations were found on pretest scores at 6 of 7 grades with significant correlations ranging from .23 to .50. Posttest correlations were also significant for 6 of

the 7 grades and ranged from .20 to .38. There was only one significant correlation for gain scores. Despite the number of statistically significant correlations, the magnitude of the relationships in even the strongest relationships is moderate at best. Most relationships are weak.

Table 5

Correlations of Holistic Scores with Attitude Scores at Each Grade

		r		
Grade	N	Pretest	Posttest	Gain
6	50	.24*	.24*	.14
7	62	.50**	.36**	.27*
8	72	.12	.28**	.02
9	75	.31**	.08	-.04
10	108	.23*	.38**	.11
11	116	.23**	.20*	.01
12	107	.34**	.31**	.02

*$p < .05$

**$p < .01$

Summary and Recommendations

A total of 25 Likert-type items rated on a 5-point scale comprise a measure of student attitudes toward writing. While the internal consistency of the scale was judged to be adequate for research purposes, test-retest reliabilities were somewhat low. Length of time between pretest and posttest may have contributed to the low obtained values. Factor analysis revealed three fairly well defined factors, with a fourth factor which was less well defined and three items which did not load on any factor. Item analysis

revealed five items which require further scrutiny and possible revision or elimination. Analysis of variance results indicate the instrument is sensitive to change. Correlations of the attitude scale with holistic scores, while significant, were generally weak.

Further analyses are recommended as a means of refining the survey and providing additional validation information. Item discrimination as well as examination of the items with low item-total correlations would aid in decisions to revise or remove items. This should be done in conjunction with an examination of the effect of item removal on coefficient alpha since the number of items is already small. Test-retest reliabilities should also be reexamined using shorter time intervals between testings. If the use of factors is desired, analyses already completed should be performed on factor scores. Finally, correlations of the scale with criterion measures would aid in providing evidence of content validity.

References

McLean, J. E., O'Neal, M., McCurley, S. P., Fritchi, O., Giles, C., & Steele, D. J. (undated). Evaluation report of the 1982-83 P. K. Yonge Writing Project. Evaluation and Assessment Laboratory, College of Education, University of Alabama.

McLean, J. E. Personal communication, June 1984.

Nunnally, J. C. (1978). Psychometric theory (2nd ed.). New York: McGraw-Hill Book Company.

FLORIDA WRITING PROJECT STUDENT SURVEY

Key:

A - I strongly agree
B - I agree
C - I sometimes agree
D - I disagree
E - I strongly disagree

Sample

Ex. 1. My favorite subject in school is biology. Ex.1. (1) (●) (3) (4) (5)

Directions: Indicate your agreement or disagreement with the following comments by marking your answers in pencil on the computer sheet.
DO NOT WRITE ON THIS PAGE.

1. I write for relaxation or as a hobby.
2. I have to force myself to write.
3. Writing is one of the activities I like least in school.
4. I have difficulty beginning a writing assignment.
5. I am a good writer.
6. Good writers spend more time than poor writers in revising their work.
7. I share my writing with others.
8. I revise my writing to make it better.
9. The teacher is the most important audience for what I write in school.
10. In general, I like school.
11. I save my writing.
12. I write notes to my family and friends.
13. I write letters.
14. I am proud of at least one piece of writing I have written during the last year.
15. I am sometimes able to write about things that are hard for me to say.
16. I keep a journal or a diary.
17. I enjoy reading.
18. I have good ideas, but I can't put them down on paper.
19. I make too many mechanical errors when I write.
20. At least one teacher I have had during my years in school has told me that I am a good writer.
21. In class, I share what I write with other students.
22. I am embarrassed by my writing.
23. I have many stories I would like to tell in writing.
24. Writing will probably be a part of the job I plan to hold in the future.
25. Writing is an important way for me to express my feelings.

Florida Writing Project - H.I. Guttinger, C.M. Morris, 1983